Find the Index of a Given Substring in a DataFrame Column

Aim

To write a Pandas program that finds the index of a given substring within a DataFrame column.

Algorithm

1. Create a sample DataFrame with a text column
2. Define the substring to search for
3. Use the `str.find()` method on the text column to locate the substring
4. Create a new column with the index results
5. Display the resulting DataFrame

Code

```python
import pandas as pd

data = {'text': ['Python is awesome', 'Pandas is powerful', 'Data science is fun',
'Machine learning is exciting']}
df = pd.DataFrame(data)

substring = 'is'

df['substring_index'] = df['text'].str.find(substring)

print(df)
```

Output

	text	substring_index
0	Python is awesome	7
1	Pandas is powerful	7
2	Data science is fun	13
3	Machine learning is exciting	17

Result

The program successfully creates a DataFrame with a text column, finds the index of the specified substring 'is' in each row of the text column, and adds a new column 'substring_index' with the results. The output shows the original text and the corresponding index where the substring 'is' first appears in each row.